

**THE FOLLOWING IS THE ENGLISH TRANSLATION OF THE  
ARTICLE 34 AMENDED SHEETS (Pages 43-49)**

**Amended claims:**

1. A precipitated silica which has the following physical and chemical properties:
  - 5 CTAB surface area 100-200 m<sup>2</sup>/g
  - BET/CTAB ratio 0.8-1.05
  - DBP value 210-280 g/(100 g)
  - Sears value V<sub>2</sub> 10-30 ml/(5 g)
  - Moisture level 4-8%.
  - 10 Ratio of Sears value V<sub>2</sub> to  
BET surface area 0.150 to 0.370 ml/(5m<sup>2</sup>)
2. The precipitated silica as claimed in claim 1,  
15 characterized in that  
the BET/CTAB ratio is from 0.9 to 1.03.
3. The precipitated silica as claimed in claim 1 or  
2,  
20 characterized in that  
the Sears value V<sub>2</sub> is from 20 to 30 ml/(5 g).
4. The precipitated silica as claimed in any of  
claims 1 to 3,  
25 characterized in that  
the CTAB surface area is from 100 to 160 m<sup>2</sup>/g.
5. The precipitated silica as claimed in any of  
claims 1 to 4,  
30 characterized in that  
the DBP value is from 250 to 280 g/(100 g).
6. The precipitated silica as claimed in any of  
claims 1 to 5,  
35 characterized in that  
the BET surface area is 80-110 m<sup>2</sup>/g.
7. The precipitated silica as claimed in any of  
claims 1 to 5,

characterized in that  
the BET surface area is 110-150 m<sup>2</sup>/g.

- 5 8. The precipitated silica as claimed in any of  
claims 1 to 7,  
characterized in that  
the ratio of Sears value V<sub>2</sub> to the BET surface  
area is from 0.140 to 0.370 ml/(5 m<sup>2</sup>).
- 10 9. A process for preparing precipitated silicas,  
characterized in that  
in succession
- 15 a) an aqueous solution of an alkali metal silicate  
or alkaline earth metal silicate and/or of an  
organic and/or inorganic base with pH from 7 to  
14 is taken as initial charge,
- 20 b) water glass and an acidifier are metered  
simultaneously into this initial charge at from  
55 to 95°C, with stirring, for from 10 to 120  
minutes,
- g) stirring of the resultant suspension is  
continued at from 80 to 98°C, for from 1 to 120  
minutes,
- 25 h) an acidifier is used to acidify to pH of from  
2.5 to 5, and
- i) the material is filtered and dried.
10. The process as claimed in claim 9,  
characterized in that
- 30 after step b) the additional steps of
- c) stopping the feed for from 30 to 90 minutes  
while maintaining the temperature,  
and
- 35 d) then, where appropriate, simultaneously feeding  
water glass and an acidifier at the same  
temperature, with stirring, for from 20 to 120  
minutes, preferably from 20 to 80 minutes  
are carried out once or twice.

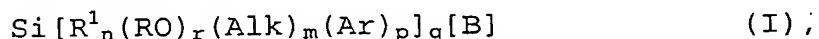
11. The process as claimed in claims 9 and 10,  
characterized in that,  
following b) or d), in step e) the pH is adjusted  
5 to from 3 to 11 by adding an acidifier.
12. The process as claimed in claim 11,  
characterized in that,  
following step b) or d), in step e) the pH is  
10 adjusted to from 7 to 10 by adding acid.
13. The process as claimed in claim 11 or 12,  
characterized in that  
in an additional step f) the pH is increased to  
15 from 8 to 14 by adding a basic compound.
14. The process as claimed in claim 13,  
characterized in that  
the base used comprises an alkali metal silicate  
20 and/or alkaline earth metal silicate and/or an  
alkali metal hydroxide and/or an alkaline earth  
metal hydroxide.
15. The process as claimed in any of claims 9 to 14,  
25 characterized in that  
during one of steps a) to h) an organic or  
inorganic salt is added.
16. The process as claimed in any of claims 9 to 15,  
30 characterized in that  
for the drying process use is made of a pneumatic  
drier, spray drier, disk drier, belt drier,  
rotating-tube drier, flash drier, spin flash  
drier, or spray tower.
- 35 17. The process as claimed in any of claims 9 to 16,  
characterized in that  
after the drying process, a roller compactor is

used for pelletizing.

18. The precipitated silica claimed in any of claims 1 to 8, or prepared as claimed in any of claims 9 to 17,

characterized in that

its surfaces have been modified with organosilanes of the formulae I to III



or



where

B is -SCN, -SH, -Cl, -NH<sub>2</sub>, -OC(O)CHCH<sub>2</sub>, -OC(O)C(CH<sub>3</sub>)CH<sub>2</sub> (if q = 1), or -S<sub>w</sub>- (if q = 2), B being chemically bonded to Alk,

R and R<sup>1</sup> are an aliphatic, olefinic, aromatic, or arylaromatic radical having 2-30 carbon atoms, optionally with substitution by the following groups: the hydroxyl, amino, alcoholate, cyanide, thiocyanide, halo, sulfonic acid, sulfonic ester, thiol, benzoic acid, benzoic ester, carboxylic acid, carboxylic ester, acrylate, methacrylate, or organosilane radical, where the meaning or substitution of R and R<sup>1</sup> may be identical or different,

n is 0, 1, or 2,

Alk is a bivalent unbranched or branched hydrocarbon radical having from 1 to 6 carbon atoms,

m is 0 or 1,

Ar is an aryl radical having from 6 to 12 carbon atoms, preferably 6 carbon atoms, which may have substitution by the following groups: the hydroxyl, amino,

- alcoholate, cyanide, thiocyanide, halo, sulfonic acid, sulfonic ester, thiol, benzoic acid, benzoic ester, carboxylic acid, carboxylic ester, acrylate, methacrylate or organosilane radical,
- 5           p           is 0 or 1, with the proviso that p and n are not simultaneously 0,
- q           is 1 or 2,
- x           is a number from 2 to 8,
- 10          r           is 1, 2, or 3, with the proviso that  $r + n + m + p = 4$ ,
- Alkyl       is a monovalent unbranched or branched saturated hydrocarbon radical having from 1 to 20 carbon atoms, preferably from 2 to 8 carbon atoms,
- 15          Alkenyl    is a monovalent unbranched or branched unsaturated hydrocarbon radical having from 2 to 20 carbon atoms, preferably from 2 to 8 carbon atoms.
- 20
19. The precipitated silica as claimed in any of claims 1 to 8 or as prepared in any of claims 9 to 17, characterized in that
- 25       its surfaces have been modified with organosilicon compounds whose composition is
- $\text{SiR}^2_{4-n}\text{X}_n$  (where  $n = 1, 2, 3, 4$ ),
- $[\text{SiR}^2_x\text{X}_y\text{O}]_z$  (where  $0 \leq x \leq 2$ ;  $0 \leq y \leq 2$ ;  $3 \leq z \leq 10$ , where  $x + y = 2$ ),
- 30        $[\text{SiR}^2_x\text{X}_y\text{N}]_z$  (where  $0 \leq x \leq 2$ ;  $0 \leq y \leq 2$ ;  $3 \leq z \leq 10$ , where  $x + y = 2$ ),
- $\text{SiR}^2_n\text{X}_m\text{OSiR}^2_o\text{X}_p$  (where  $0 \leq n \leq 3$ ;  $0 \leq m \leq 3$ ;  $0 \leq o \leq 3$ ;  $0 \leq p \leq 3$ , where  $n + m = 3$ ,  $o + p = 3$ ),
- $\text{SiR}^2_n\text{X}_m\text{NSiR}^2_o\text{X}_p$  (where  $0 \leq n \leq 3$ ;  $0 \leq m \leq 3$ ;  $0 \leq o \leq 3$ ;  $0 \leq p \leq 3$ , where  $n + m = 3$ ,  $o + p = 3$ ),
- 35       and/or
- $\text{SiR}^2_n\text{X}_m[\text{SiR}^2_x\text{X}_y\text{O}]_z\text{SiR}^2_o\text{X}_p$  (where  $0 \leq n \leq 3$ ;  $0 \leq m \leq 3$ ;  $0 \leq x \leq 2$ ;  $0 \leq y \leq 2$ ;  $0 \leq o \leq 3$ ;  $0 \leq p \leq 3$ ;  $1 \leq z \leq$

10000, where  $n + m = 3$ ,  $x + y = 2$ ,  $o + p = 3$ )

where

$R^2$  is alkyl and/or aryl radicals, substituted and/or unsubstituted, having from 1 to 20 carbon atoms, and/or is alkoxy, and/or alkenyl, and/or alkynyl groups, and/or is sulfur-containing groups,

X is a silanol, amino, thiol, halogen, alkoxy, alkenyl and/or hydrogen radical.

10

20. A process for preparing the silicas as claimed in claim 18 or 19,

characterized in that

15

the precipitated silicas are modified with organosilanes in mixtures of from 0.5 to 50 parts, based on 100 parts of precipitated silica, in particular from 1 to 15 parts, based on 100 parts of precipitated silica, where the reaction between precipitated silica and organosilane is carried out during the preparation of the mixture (in situ) or externally via spray application and subsequent heat-conditioning of the mixture, via mixing of the organosilane and the silica suspension with subsequent drying and heat-conditioning.

25

21. The use of silicas as claimed in any of claims 1 to 20 in elastomer mixtures, in vulcanizable rubber mixtures, and/or in other vulcanizates, such as pneumatic tires, tire treads, cable sheathing, hoses, drive belts, conveyor belts, V-belts, roller coverings, tires, shoe soles, gaskets, and damping elements.

30

35 22. The use of silicas as claimed in any of claims 1 to 20 in battery separators, as antiblocking agent, as matting agent in inks and paints, as carrier for agricultural products and for feeds,

in coatings, in printing inks, in fire-extinguisher powders, in plastics, in the non-impact printing sector, in paper pulp, or in the personal care sector.

5

23. A vulcanizable rubber mixture or a vulcanizate comprising, as filler, the precipitated silica as claimed in claim 1, with the following physical and chemical properties:

10	CTAB surface area	100-200 m <sup>2</sup> /g
	BET/CTAB ratio	0.8-1.05
	DBP value	210-280 g/(100 g)
	Sears value V <sub>2</sub>	10-30 ml/(5 g)
	Ratio of Sears value V <sub>2</sub> to	
15	BET surface area	0.150 to 0.370 ml/(5m <sup>2</sup> )
	Moisture level	4-8%.